THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

DOCKET NO. 2017-292WS

IN RE: Application of Carolina Water, Inc. for Adjustment of Rates and Charges and Modifications to Certain Terms and Conditions for the Provision of Water and Sewer Service

CORRECTED

DIRECT TESTIMONY OF BOB GILROY

Q. PLEASE STATE YOUR FULL NAME AND BUSINESS ADDRESS.

A. My name is Bob Gilroy. My business address is 150 Foster Brothers Drive, West Columbia, South Carolina 29172.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am Vice President of Operations for Carolina Water Service, Inc. ("Company" or "CWS"). My duties include the supervision of CWS's consolidated operations to include the maintenance, repair and replacement of water and sewer lines and other water and wastewater facilities. I work with state regulatory agencies such as the Office of Regulatory Staff ("ORS") and the South Carolina Department of Health and Environmental Control ("DHEC") regarding compliance procedures and requirements. I also work with developers and builders regarding new and existing development and work to ensure that individual customer concerns regarding their water and sewer service are handled properly and satisfactorily resolved. As needed, I communicate directly with individual customers and home owner associations to help resolve service related issues.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I am a 1971 graduate of Franklin Delano High School in Hyde Park, New York. I have been a resident of West Columbia, South Carolina since 1979. As a part of my training and

experience in the water and wastewater industry, I have attended various industry technical sessions, workshops, and seminars. I served for two and one-half years as an operator for the East Richland County Public Service District, a wastewater treatment facility located in Columbia. I have been employed by CWS for 28 years. I have worked as a water and wastewater operator primarily within the Midlands and served as field safety coordinator responsible for acquiring safety equipment and providing safety training to our employees as required by company policy and by the Occupational Safety and Health Administration. In 2002, I acquired full time responsibility as the Regional Field Safety Coordinator for the safety program affecting South Carolina and other mid-Atlantic states. In 2003, I became the Corporate Field Safety Coordinator for Utilities, Inc. and assisted management with providing, promoting and enforcing a compliant safety program while instilling a positive safety culture within all areas of the Company. I held this position until 2008, when I assumed the position of Regional Manager here in South Carolina. In 2014, after a reorganization of the Utilities, Inc.'s South Carolina corporate structure, I became the CWS Vice President of Operations.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to (1) provide an overview of the Company's system, (2) explain the drivers of the present rate increase request, (3) describe the capital and operational improvements made by the Company during the test year, and (4) share CWS's plans for future investments and improvements to benefit customers.

Q. PLEASE DESCRIBE THE COMPANY'S SYSTEM IN SOUTH CAROLINA.?

A. CWS has approximately 26,400 customers in 16 counties: Lexington, Richland, Sumter, Aiken, Saluda, Orangeburg, Beaufort, Georgetown, Abbeville, Union, Anderson, York, Cherokee, Greenville, Greenwood, and Williamsburg. As a result of the merger with Southland Utilities, Inc., Utilities Services of South Carolina, Inc., and United Utility Companies, Inc. in 2015, the Company

operates 105 water systems and 28 sewer systems. CWS has 105 drinking water permits, 19 NPDES permits and 9 satellite sewer system permits to support the operations of these systems.

Q. WHY HAS THE COMPANY FILED AN APPLICATION TO ADJUST ITS RATES AND CHARGES AND MODIFY CERTAIN TERMS AND CONDITIONS OF SERVICE?

A. Simply stated, the Company's rates are not sufficient to cover the costs to serve customers and provide a reasonable return to the Company on its invested capital. Our commitment to customers to provide safe, reliable water and sewer service requires that we make the investments necessary to modernize our systems and comply with local, state and federal laws and regulations. Like other public infrastructure (roads, electric grid, etc.), water and wastewater utilities across the country are faced with repairing and replacing aging facilities that are many years beyond their intended design life. We have a capital plan in place that supports CWS's infrastructure modernization program while also balancing potential rate impacts to customers of needed system improvements. Another important driver of the present case is the recovery of increases in the Company's purchased water costs. These costs are bulk commodity costs that are passed through to customers. Unlike fuel commodity costs for electric utilities, water utilities do not have an annual adjustment mechanism to flow cost increases or decreases to customers on a regular basis. As a result, we are also seeking to recover those costs in this case.

Q. IS CWS ASKING TO CHANGE ANY PROVISIONS IN ITS WATER AND SEWER TARIFFS OTHER THAN THE MONTHLY CHARGES FOR SEWER SERVICE, AND THE BASE FACILITIES AND COMMODITIES CHARGES FOR WATER SERVICE?

A. Yes, CWS is requesting several changes to its terms and conditions. The Company seeks to amend its Cross-Connections Inspection conditions to require residential customers to test their back-flow devices every two years (as opposed to every year as currently required), and to authorize the Company to terminate service to any customer who, after notice, fails to demonstrate

that its back-flow device is operating properly. A two-year requirement reduces the burden on our customers and should adequately protect the utility. The Company also seeks authority to increase its Water Meter Installation charge from $35 to $45 to more closely reflect the utility's costs.

Q. PLEASE DESCRIBE SOME OF THE CAPITAL IMPROVEMENTS MADE TO CWS'S WATER DISTRIBUTION SYSTEM AND SEWER SYSTEM SINCE THE LAST RATE CASE.

A. Since its last rate case, the Company has made investments to utility plant in service of $13,942,366 including, but not limited to:

- Hydro tank replacement program: the Company is working to replace varying sizes of aging hydro tanks in order to safeguard employees and the communities we serve. Since the last rate proceeding, tank replacements completed to date total $1,311,284,

- Forty Love/Indian Fork: CWS has installed a 3/4' mile drinking water interconnection to the City of Columbia to convert the system to a purchased surface water supply from a well supply system to resolve water quality and pressure issues within the distribution system. Decommissioned and removed well water facilities. The project cost totaled $1,080,237,

- Friarsgate WWTP EQ liner remediation: the Company has removed the existing in-ground 1.1 million gallon equalization basin high density polyethylene liner, investigated and addressed contaminated soils underneath the liner and prepped the basin for installation of a new liner. A 1.6 million-gallon temporary EQ tank was installed while work has been conducted. The remediation phase of this project totaled $1,081,375,

- Friarsgate collection system: CWS has undertaken an inflow and infiltration (I&I) survey and remediation work to address aging clay sewer main infrastructure. The purpose of this project was to ensure continuity of customer sewer service and avoid potential environmental impact from aged sewer mains issues such as root intrusion, leaks, and clogs. The project cost totaled $591,613,

- Friarsgate WWTP: CWS purchased and installed three 75 horsepower blowers to replace existing blowers that were reaching end of life. These blowers provide aeration that is critical for the treatment process of the wastewater and to control odors. The project cost totaled $206,031,

- Pocalla Inflow and Infiltration reduction and system improvements: the Company relined clay sewer collection mains utilizing cured in place piping (CIPP) due to high

infiltration rates following the historic flooding of October 2015, which resulted in sections of mains being damaged by excessive surcharging of the system. The project cost totaled $335,066,

- River Hills Lift Station #8: CWS decommissioned and removed an existing dry can sewer lift station due to the facility's age and safety concerns to employees and built a new duplex submersible lift station in a new location to satisfy county zoning ordinances. The project cost totaled $195,295,

- Peachtree Acres interconnection with the City of West Columbia: The project cost totaled $118,584,

- Washington Heights interconnect: the Company installed an interconnection with the City of Columbia to supplement the existing well water supply system for enhanced flushing of the system and to provide fire flow to the existing fire hydrants. The project cost totaled $61,167, and

- Other maintenance and capital improvement program: the Company replaced or relocated sewer mains, water mains, sewer laterals, well pumps/motors, water meters, water service lines, valves, control panels, manhole rehabilitation/ replacement, sewer pumps.

Q. WHAT EFFECT HAVE THE CAPITAL IMPROVEMENTS MADE TO THE COMPANY'S WATER AND WASTWATER SYSTEM SINCE THE LAST RATE CASE HAD ON ITS OPERATIONS AND SERVICE?

A. The investments we have made have increased the safety and reliability of our system for the benefit of customers. For example, the hydro tank replacement program has improved the safety and reliability of our water service to customers. Nationally, hydro tanks are rapidly coming to the end or their useful lives, and CWS has been proactive in inspecting and replacing its hydro tanks. The Company has had a testing program for these tanks in place for a number of years. However, the Company has recently accelerated its inspection and replacement program. Newer tanks are designed and built to a more rigid code as required by the American Society of Mechanical Engineers and are more reliable than the tanks they replaced. Because they are less likely to rupture, our water system is more reliable and our service personnel and the communities we serve are less likely to experience a service interruption.

The Company has also made investments to address well water quality and pressure concerns on its systems. Many systems were built in rural areas to address potable water needs where no municipal systems were located. This was the case for the Forty Love/Indian Fork communities. Over the years, the wells' water quality and pressure has been affected by decreasing water table levels and influences from nearby large bodies of water like Lake Murray. Well systems are also dependent on rainfall and susceptible to drought conditions. To provide a consistent supply of good quality potable water at sustained pressures, the Company determined it was necessary to invest in interconnecting its system with the City of Columbia to resolve the customer concerns regarding quality and quantity.

In another illustration of capital improvements made to improve the Company's operations and service, CWS has worked to reduce and contain inflow and infiltration, or "I & I", in Friarsgate and Pocalla. I & I occurs primarily in aged clay sewer mains as a result of cracks, separation, root intrusion, improper tapping of main by builders (hammer taps), aged or damaged manholes, unauthorized tapping of mains for storm water runoff of gutters, and ground and/or storm water flow into the sewer collection system. The additional water puts undue strain on the system and drives up costs and may result in sanitary sewer overflows during heavy rain periods. I & I increasingly strains a sewer system as it ages. There are steps a sewer utility such as CWS can take to limit I & I. Where necessary broken sewer lines and damaged manholes are repaired and replaced. Increasingly, aging sewer lines, and particularly those constructed from clay pipe, may become seriously compromised. Digging up and replacing thousands of feet of old clay pipe may not always be the most cost-effective alternative. Often, the Company can address the issue successfully by lining these pipes with "cured in place piping", known by its acronym, "CIPP". The Company has lined thousands of feet of pipe without having to dig through streets and landscaped yards to address I &I. The CIPP lining is more durable than the clay and is expected

to have a useful life of 50 years.

The Company has also made reliability and safety improvements to improve flushing capability on its systems. The Washington Heights water system was developed and set up in a way that prohibited effective and efficient flushing of the lines bi-annually as desired, which led to occasional periods of discolored water entering homes. The well pressure and volume of water was adequate for the normal operation, but not for a complete efficient flushing of the system. The Company installed a supplemental interconnection with the City of Columbia to improve the flushing capabilities of the system while providing fire flow to the existing fire hydrants and serving as an emergency water supply when needed.

In Riverhills, we improved service reliability by upgrading a substantial sewer pump station. The pump station was constructed with a dry well adjacent to the wet well. The confined space of the dry well presented risks to our personnel and contractors. Although the wet well held the sewer water, the pumps had been installed in the dry well. Our service personnel had to enter the dry well to perform frequent checks or servicing. Service contractors also had to enter the subterranean space to service or repair the pumps as required. We determined that improved service reliability and employee/contractor safety justified converting the aged dry well pump station into a duplex submersible sewer pump station and filling in and properly abandoning the dry well work space. The new pumps are more efficient, cost-effective and our service personnel are not put at risk during service calls. In order to complete this project, the York County Zoning Board required us to move the lift station to an area not visible to residences as required by their zoning ordinance. Finally, CWS has also acted to replace water and sewer main sections, gravity lines, pumps, meters and manholes, all of which act to improve system reliability.

Q. DO YOU ANTICIPATE THE NEED FOR ADDITIONAL SUBSTANTIAL CAPITAL IMPROVEMENTS IN THE NEAR FUTURE?

A. Yes, I would note the following:

- Interconnect Stonegate water system with City of Columbia:

CWS plans are to convert the Stonegate water supply from well sources to purchased surface water from the City of Columbia. This will resolve the customer concerns regarding water quality due to high mineral content which periodically results in instances of discolored water from iron and manganese content,

- Friarsgate relining clay sewer mains:

CWS has an ongoing effort to address aging sewer collection system infrastructure. Within the Friarsgate collection system, CWS is addressing the replacement and relining of thousands of feet of aged clay sewer mains and hundreds of aged concrete and brick manholes. This is being conducted to reduce I & I within the system resulting in high flows negatively impacting the treatment plant and environmental impact of high flows. This also decreases the potential for sewer clogs and backups impacting customer service and the environment,

- Drill new well to replace aging well with reduced production: in Hunter's Glen:

Of the two existing well sources supplying potable water to the Hunter's Glen water customers, one is decreasing in production and rehabilitation efforts have been exhausted. The new well will provide a continuity of service and the system will also remain compliant with capacity requirements,

- Interconnect Sherwood Forest water system with Sandy Springs Water District:

This well source distribution system is provided water by a single well source If the well source is interrupted or fails entirely, there will be a disruption in service to the customers which could be prolonged. Converting the distribution system to a purchased water system will avoid this possibility,

- Rehabilitation of seven sewer pump stations in River Hills:

This an effort to address aging infrastructure. The multiple pump stations to be addressed are obsolete in design. The rehabilitation and upgrading of these facilities will provide a continuity in service to customers and avoid the potential for impacts to the environment should they fail.

- River Hills relining clay sewer mains:

CWS has an ongoing effort address aging sewer collection system infrastructure. Within the River Hills collection system in coming years, CWS will replace and reline thousands of feet of aged clay sewer mains and hundreds of aged concrete and brick manholes. This will be done to reduce I & I within the system and high flows and could negatively impact the treatment plant. This work will also decrease the potential for sewer clogs and backups impacting customer service and the environment.

- Replace the Oakland WWTP clarifier:

  This project will replace a component within the treatment system which is nearing end of life. The inground steel clarifier suffers from corrosion and its replacement will ensure continuity of service to the Oakland Plantation customers as well as avoid potential environmental impacts should the component fail.

Q. WHAT IS THE STATUS OF THE I-20 SYSTEM AND ITS NPDES PERMIT?

A. On February 1, 2018, the Town of Lexington assumed ownership and operational control, including billing to the approximately 2000 sewer customers, of the Company's former I-20 wastewater treatment facility pursuant to a condemnation action filed by the Town against CWS. On February 1, 2018, SC DHEC transferred the NPDES Permit for the plant to the Town, also effective February 1, 2018. The transfer price of the system remains the subject of the pending condemnation action and will be determined by a jury.

Q. WHAT IS THE STATUS OF THE FRIARSGATE WASTEWATER TREATMENT PLANT (WWTP) AND ITS NPDES PERMIT?

A. The Friarsgate WWTP continues to operate pursuant to its NPDES permit, dated January 6, 2000. In accordance with the Central Midlands Regional 208 Water Quality Plan, the Friarsgate WWTP is considered a temporary treatment facility. In November 2017, CWS was notified that the City of Columbia's regional sewage system had achieved the capacity needed to accept the wastewater from Friarsgate. In addition to the City of Columbia, Richland County is also a qualifying regional provider under the 208 Plan. Since November 2017, the Company has held several meetings with the City of Columbia and Richland County to discuss interconnecting Friarsgate with their systems. Interconnection proposals from both the City and the County are expected to be received by CWS by March 1, 2018.

Q. PLEASE DESCRIBE THE PERFORMANCE OF THE FRIARSGATE WWTP SINCE THE LAST RATE CASE.

A. The Friarsgate WWTP has been in operation since the 1970s and has maintained substantial

compliance with its permit limitations throughout this period. In the last several years, the facility has experienced several plant upsets due to the age of the facility and obsolescence of some plant components. Specifically, in June 2016, the plant experienced an upset because of turbid effluent that interfered with the ultra violet disinfection used by the plant to kill bacteria in the effluent before it is discharged into the receiving waters of the Saluda River. The result was excessive fecal levels above the permit limits. A "no swim" advisory was posted for the Saluda Shoals area of the Saluda River until the work to address the issue was completed.

Q. WHAT UPGRADES HAS CWS MADE TO THE FRIARSGATE WWTP?

A. The Company has made numerous improvements to the Friarsgate WWTP over the years, including replacing gas chorine with ultra violet for disinfection, replacing aging electrical circuit breakers and control panel components, and adding treatment basins to serve an increasing population with increasing flow levels. New effluent force main turbine pumps were added within recent years to replace the original older pumps for reliability and to increase pumping capacity. Much of the plant, including the concrete effluent basins, were original components with significant wear. After the June 2016 plant upset, we mitigated the bacteria exceedances through treatment processes and also addressed the multiple effluent basin components by relining or constructing new basins and flow controls. CWS installed modern control panels with newer variable speed technology for existing pumps to control treatment plant flows. Additionally, new piping with more modern air diffusers were installed throughout the plant for delivery of enhanced dissolved oxygen for treatment.

Q. WHAT STEPS IS CWS TAKING TO PREPARE FOR THE INTERCONNECTION OF FRIARSGATE WWTP TO A REGIONAL PROVIDER?

A. The company is aggressively pursuing discussions with the City of Columbia and Richland County. After receiving proposals from the City and the County, the company will select a provider

and begin negotiations on the terms of an interconnection agreement. In preparation for the interconnection and to facilitate an expeditious transition to an interconnected system, CWS recently hired Clearwater Solutions to operate the Friarsgate WWTP.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.